## AUTHOR INDEX


Adler, Ronald J., Drift compensation in a mosaic sensor, 2
Aharoni, H., Horizontal tunneling and surface band bending: an external technique for wavelength tuning of surface-emitting light-emitting diodes (LEDs)
———, Spectral tuning of shallow-junction surface-emitting light-emitting diodes (LEDs) through γ-ray irradiation, 92
Alfassi, Z. B., Spectral tuning of shallow-junction surface-emitting light-emitting diodes (LEDs) through γ-ray irradiation, 92
Andrada, Thiophilos, Thermal infrared pushbroom imagery acquisition and processing, 37
Bankus, R. A., Statistical modeling of scene variability, 116
Barney, J., Infrared technique applied to large solar arrays, 176
Beaulieu, R., Wax films used as infrared photographic recording medium, 196
Ben-Shalom, A., Infrared spectral radiance of the sky, 134
Billingsley, F. II, Utility of infrared measurements programs, 28
Bleicher, Irving, Theory and experimental results of a charge transport detector, 108
Brown, Thomas J., Thermal infrared pushbroom imagery acquisition and processing, 37
Burton, Robert W., Infrared application to the detection of induced surface currents, 84
Carnahan, S. U., Solid-state shuttle launched meteorological sensor, 143
Chadbourne, R. K. Jr., Utility of infrared measurements programs, 28
Chou, Fei Mei L., Drift compensation in a mosaic sensor, 2
Corbett, Francis J., Thermal infrared pushbroom imagery acquisition and processing, 37
Davis, W. W., Statistical modeling of scene variability, 116
Decker, H., Infrared techniques applied to large solar arrays, 176
Devir, A. D., Determination of atmospheric water vapor content in moderate optical paths by radiometric measurements, 148
———, Infrared spectral radiance of the sky, 134
Dyner, H. B., Goal programming for preliminary design and critical technology identification: application to infrared step-stare moving target detection, 57
Eargle, J. R., Solid-state shuttle launched meteorological sensor, 143
Gallery, W., Earth limb emission analysis of Spectral Infrared Rocket Experiment (SPIRE) data at 2.7 micrometers, 139
Greenberg, L. T., Radiative transfer and 4.3 μm atmospheric clutter observations, 126
Guénette, L., Wax films used as infrared photographic recording medium, 196
Hava, S., Horizontal tunneling and surface band bending: an external technique for wavelength tuning of surface-emitting light-emitting diodes (LEDs), 199
———, Spectral tuning of shallow-junction surface-emitting light-emitting diodes (LEDs) through γ-ray irradiation, 92
Hirsh, I., Horizontal tunneling and surface band bending: an external technique for wavelength tuning of surface-emitting light-emitting diodes (LEDs), 199
———, Spectral tuning of shallow-junction surface-emitting light-emitting diodes (LEDs) through γ-ray irradiation, 92
Hodor, J., Infrared techniques applied to large solar arrays, 176
Janssens, Thomas J., Smear compensation for a pushbroom scan, 101
Kassal, T., Balloon atmospheric mosaic measurements (BAMM) IIA phenomenology and band selection, 70
Kopeika, N. S., Horizontal tunneling and surface band bending: an external technique for wavelength tuning of surface-emitting light-emitting diodes (LEDs), 199
———, Spectral tuning of shallow-junction surface-emitting light-emitting diodes (LEDs) through γ-ray irradiation, 92
Kramer, P., Utility of infrared measurements programs, 28
Kumer, J. B., Review of some nonlocal-thermodynamic-equilibrium high altitude 4.3 μm background effects, 153
Kushelevsky, A. P., Spectral tuning of shallow-junction surface-emitting light-emitting diodes (LEDs) through γ-ray irradiation, 92
Lessard, R. A., Wax films used as infrared photographic recording medium, 196
Lipson, S. G., Determination of atmospheric water vapor content in moderate optical paths by radiometric measurements, 148
———, Infrared spectral radiance of the sky, 134
Maksymowicz, A. T., Statistical modeling of scene variability, 116
Mann, Allen, Infrared zoom lens system for target detection, 160
Martin, Victor M., Infrared application to the detection of induced surface currents, 84
Mazaika, Paul K., Jitter-induced clutter in staring sensors arising from background spatial radiance gradients, 14
McCreight, Craig R., Development and evaluation of integrated infrared arrays for astronomical applications, 187
Mollicone, R., Utility of infrared measurements programs, 28
Nadile, R., Earth limb emission analysis of Spectral Infrared Rocket Experiment (SPIRE) data at 2.7 micrometers, 139
Naes, L. G., Two years orbital performance summary of Stirling cycle mechanical refrigerators, 95
Nast, T. C., Two years orbital performance summary of Stirling cycle mechanical refrigerators, 95
Noll, R. E., Solid-state shuttle launched meteorological sensor, 143
Paulson, R., Infrared techniques applied to large solar arrays, 176
Pecora, V. J., Statistical modeling of scene variability, 116
Polak, M., Spectral tuning of shallow-junction surface-emitting light-emitting diodes (LEDs) through γ-ray irradiation, 92
Randall, C. M., Radiative transfer and 4.3 μm atmospheric clutter observations, 126
Schaff, F. L., Solid-state shuttle launched meteorological sensor, 143
Sega, Ronald M., Infrared application to the detection of induced surface currents, 84
Selby, J. E. A., Balloon atmospheric mosaic measurements (BAMM) IIA phenomenology and band selection, 70
Shafer, David, Simple infrared telescope with stray-light rejection, 171
Sharma, R., Earth limb emission analysis of Spectral Infrared Rocket Experiment (SPIRE) data at 2.7 micrometers, 139
Smith, P. L., Goal programming for preliminary design and critical technology identification: application to infrared step-stare moving target detection, 57
Smith, Sheldon M., Bidirectional reflectance distribution function (BRDF) measurements of sunshield and baffle materials for the Infrared Astronomy Satellite (IRAS) telescope, 205
Spera, Timothy J., Thermal infrared pushbroom imagery acquisition and processing, 37
Spiro, I. J., Overview of infrared measurements programs, 214
Stair, A. T., Jr., Earth limb emission analysis of Spectral Infrared Rocket Experiment (SPIRE) data at 2.7 micrometers, 139
Trakhovsky, E., Determination of atmospheric water vapor content in moderate optical paths by radiometric measurements, 148
Valdes, Sergio F., Smear compensation for a pushbroom scan, 101
Wald, Leonard H., Drift compensation in a mosaic sensor, 2
———, Statistical modeling of scene variability, 116
Warmuth, Donald B., Infrared application to the detection of induced surface currents, 84
Waters, R., Balloon atmospheric mosaic measurements (BAMM) IIA phenomenology and band selection, 70
Williams, V. L., Solid-state shuttle launched meteorological sensor, 143
Winter, E. M., Recent measurements of earth background spatial radiance variations, 64

## SUBJECT INDEX


Acquisition and processing, thermal infrared pushbroom imagery, 37
Arrays for astronomical applications, development and evaluation of integrated infrared, 187
Arrays, infrared technique applied to large solar, 176
Astronomical applications, development and evaluation of integrated infrared arrays for, 187
Astronomy Satellite (IRAS) telescope, bidirectional reflectance distribution function (BRDF) measurements of sunshield and baffle materials for the Infrared, 205
Atmospheric clutter observations, radiative transfer and 4.3 $\mu$m, 126
Atmospheric mosaic measurements (BAMM) IIA phenomenology and band selection, balloon, 70
Atmospheric water vapor content in moderate optical paths by radiometric measurements, determination of, 148

Background effects, review of some nonlocal-thermodynamic-equilibrium high-altitude 4.3 $\mu$m, 153
Background spatial radiance gradients, jitter-induced clutter in staring sensors arising from, 14
Background spatial radiance variations, recent measurements of earth, 64
Baffle materials for the Infrared Astronomy Satellite (IRAS) telescope, bidirectional reflectance distribution function (BRDF) measurements of sunshield and, 205
Balloon atmospheric mosaic measurements (BAMM) IIA phenomenology and band selection, 70
Band bending: an external technique for wavelength tuning of surface-emitting light-emitting diodes (LEDs), horizontal tunneling and surface, 199
Band selection, balloon atmospheric mosaic measurements (BAMM) IIA phenomenology and, 70
Bending: an external technique for wavelength tuning of surface-emitting light-emitting diodes (LEDs), horizontal tunneling and surface band, 199
Bidirectional reflectance distribution function (BRDF) measurements of sunshield and baffle materials for the Infrared Astronomy Satellite (IRAS) telescope, 205

Charge transport detector, theory and experimental results of a, 108
Clutter in staring sensors arising from background spatial radiance gradients, jitter-induced, 14
Clutter observations, radiative transfer and 4.3 $\mu$m atmospheric, 126
Compensation in a mosaic sensor, drift, 2
Compensation for a pushbroom scan, smear, 101
Critical technology identification: application to infrared step-stare moving target detection, goal programming for preliminary design and, 57
Currents, infrared application to the detection of induced surface, 84

Design and critical technology identification: application to infrared step-stare moving target detection, goal programming for preliminary, 57
Detection, goal programming for preliminary design and critical technology identification: application to infrared step-stare moving target, 57
Detection of induced surface currents, infrared application to the, 84
Detection, infrared zoom lens system for target, 160
Detector, theory and experimental results of a charge transport, 108
Determination of atmospheric water vapor content in moderate optical paths by radiometric measurements, 148
Development and evaluation of integrated infrared arrays for astronomical applications, 187
Distribution function (BRDF) measurements of sunshield and baffle material for the Infrared Astronomy Satellite (IRAS) telescope, bidirectional reflectance, 205
Drift compensation in a mosaic sensor, 2

Earth background spatial radiance variations, recent measurements of, 64
Earth limb emission analysis of Spectral Infrared Rocket Experiment (SPIRE) data at 2.7 micrometers, 139
Emission analysis of Spectral Infrared Rocket Experiment (SPIRE) data at 2.7 micrometers, earth limb, 139
Equilibrium high-altitude 4.3 $\mu$m background effects, review of some nonlocal-thermodynamic-, 153
Experiment (SPIRE) data at 2.7 micrometers, earth limb emission analysis of spectral infrared rocket, 139
Experimental results of a charge transport detector, theory and, 108
External technique for wavelength tuning of surface-emitting light-emitting diodes (LEDs), horizontal tunneling and surface band bending: an, 199

Films used as infrared photographic recording medium, wax, 196
4.3 $\mu$m atmospheric clutter observations, radiative transfer and, 126
4.3 $\mu$m background effects, review of some nonlocal-thermodynamic-equilibrium high-altitude, 153

Goal programming for preliminary design and critical technology identification: application to infrared step-stare moving target detection, 57
Gradients, jitter-induced clutter in staring sensors arising from background spatial radiance, 14

High altitude 4.3 $\mu$m background effects, review of some nonlocal-thermodynamic-equilibrium, 153
Horizontal tunneling and surface band bending: an external technique for wavelength tuning of surface-emitting light-emitting diodes (LEDs), 199

Identification: application to infrared step-stare moving target detection, goal programming for preliminary design and critical technology, 57
Imagery acquisition and processing, thermal infrared pushbroom, 37
Induced surface currents, infrared application to the detection of, 84
Infrared application to the detection of induced surface currents, 84
Infrared arrays for astronomical applications, development and evaluation of integrated, 187
Infrared Astronomy Satellite (IRAS) telescope, bidirectional reflectance distribution function (BRDF) measurements of sunshield and baffle materials for the, 205
Infrared measurement programs, overview of, 214
Infrared measurements programs, utility of, 28
Infrared photographic recording medium, wax films used as, 196
Infrared pushbroom imagery acquisition and processing, thermal, 37
Infrared Rocket Experiment (SPIRE) data at 2.7 micrometers, earth limb emission analysis of spectral, 139
Infrared spectral radiance of the sky, 134
Infrared step-stare moving target detection, goal programming for preliminary design and critical technology identification: application to, 57
Infrared techniques applied to large solar arrays, 176
Infrared telescope with stray-light rejection, simple, 171
Infrared zoom lens system for target detection, 160
Integrated infrared arrays for astronomical applications, development and evaluation of, 187
Irradiation, spectral tuning of shallow-junction surface-emitting light-emitting diodes (LEDs) through $\gamma$-ray, 92

Jitter-induced clutter in staring sensors arising from background spatial radiance gradients, 14
Junction surface-emitting light-emitting diodes (LEDs) through $\gamma$-ray irradiation, spectral tuning of shallow-, 92

Large solar arrays, infrared technique applied to, 176
Lens system for target detection, infrared zoom, 160
Light-emitting diodes (LEDs), horizontal tunneling and surface band bending: an external technique for wavelength tuning of surface-emitting, 199

Light-emitting diodes (LEDs) through γ-ray irradiation, spectral tuning of shallow-junction surface-emitting, 92
Light rejection, simple infrared telescope with stray-, 171
Limb emission analysis of Spectral Infrared Rocket Experiment (SPIRE) data at 2.7 micrometers, earth, 139

Materials for the Infrared Astronomy Satellite (IRAS) telescope, bidirectional reflectance distribution function (BRDF) measurements of sunshield and baffle, 205
Measurement programs, overview of infrared, 214
Measurements (BAMM) IIA phenomenology and band selection, balloon atmospheric mosaic, 70
Measurements, determination of atmospheric water vapor content in moderate optical paths by radiometric, 148
Measurements of earth background spatial radiance variations, recent, 64
Measurements programs, utility of infrared, 28
Measurements of sunshield and baffle materials for the Infrared Astronomy Satellite (IRAS) telescope, bidirectional reflectance distribution function (BRDF), 205
Mechanical refrigerators, two years orbital performance summary of Stirling cycle, 95
Medium, wax films used as infrared photographic recording, 196
Meteorological sensor, solid-state shuttle launched, 143
Modeling of scene variability, statistical, 116
Moderate optical paths by radiometric measurements, determination of atmospheric water vapor content in, 148
Mosaic measurements (BAMM) IIA phenomenology and band selection, balloon atmospheric, 70
Mosaic sensor, drift compensation in a, 2
Moving target detection, goal programming for preliminary design and critical technology identification: application to infrared step-stare, 57

Optical paths by radiometric measurements, determination of atmospheric water vapor content in moderate, 148
Orbital performance summary of Stirling cycle mechanical refrigerators, two years, 95
Overview of infrared measurement programs, 214

Phenomenology and band selection, balloon atmospheric mosaic measurements (BAMM) IIA, 70
Photographic recording medium, wax films used as infrared, 196
Processing, thermal infrared pushbroom imagery acquisition and, 37
Programming for preliminary design and critical technology identification: application to infrared step-stare moving target detection, goal, 57
Programs, overview of infrared measurement, 214
Pushbroom imagery acquisition and processing, thermal infrared, 37
Pushbroom scan, smear compensation for a, 101

Radiance gradients, jitter-induced clutter in staring sensors arising from background spatial, 14
Radiance of the sky, infrared spectral, 134
Radiance variations, recent measurements of earth background spatial, 64
Radiative transfer and 4.3 μm atmospheric clutter observations, 126
Radiometric measurements, determination of atmospheric water vapor content in moderate optical paths by, 148
Ray irradiation, spectral tuning of shallow-junction surface-emitting light-emitting diodes (LEDs) through γ-, 92
Recent measurements of earth background spatial radiance variations, 64
Recording medium, wax films used as infrared photographic, 196
Reflectance distribution function (BRDF) measurements of sunshield and baffle materials for the Infrared Astronomy Satellite (IRAS) telescope, bidirectional, 205
Refrigerators, two years orbital performance summary of Stirling cycle mechanical, 95
Rejection, simple infrared telescope with stray-light, 171
Review of some nonlocal-thermodynamic-equilibrium high-altitude 4.3 μm background effects, 153
Rocket Experiment (SPIRE) data at 2.7 micrometers, earth limb emission analysis of spectral infrared, 139

Satellite (IRAS) telescope, bidirectional reflectance distribution function (BRDF) measurements of sunshield and baffle materials for the Infrared Astronomy, 205
Scan, smear compensation for a pushbroom, 101
Scene variability, statistical modeling of, 116
Sensor, drift compensation in a mosaic, 2
Sensor, solid-state shuttle launched meteorological, 143
Sensors arising from background spatial radiance gradients, jitter-induced clutter in staring, 14
Shallow-junction surface-emitting light-emitting diodes (LEDs) through γ-ray irradiation, spectral tuning of, 92
Shuttle launched meteorological sensor, solid-state, 143
Simple infrared telescope with stray-light rejection, 171
Sky, infrared spectral radiance of the, 134
Smear compensation for a pushbroom scan, 101
Solar arrays, infrared technique applied to large, 176
Solid-state shuttle-launched meteorological sensor, 143
Spatial radiance gradients, jitter-induced clutter in staring sensors arising from background, 14
Spatial radiance variations, recent measurements of earth background, 64
Spectral Infrared Rocket Experiment (SPIRE) data at 2.7 micrometers, earth limb emission analysis of, 139
Spectral radiance of the sky, infrared, 134
Spectral tuning of shallow-junction surface-emitting light-emitting diodes (LEDs) through γ-ray irradiation, 92
Stare moving target detection, goal programming for preliminary design and critical technology identification: application to infrared step-, 57
Staring sensors arising from background spatial radiance gradients, jitter-induced clutter in, 14
Statistical modeling of scene variability, 116
Step-stare moving target detection, goal programming for preliminary design and critical technology identification: application to infrared, 57
Stirling cycle mechanical refrigerators, two years orbital performance summary of, 95
Stray-light rejection, simple infrared telescope with, 171
Sunshield and baffle materials for the Infrared Astronomy satellite (IRAS) telescope, bidirectional reflectance distribution function (BRDF), measurements of, 205
Surface band bending: an external technique for wavelength tuning of surface-emitting light-emitting diodes (LEDs), horizontal tunneling and, 199
Surface currents, infrared application to the detection of induced, 84
Surface-emitting light-emitting diodes (LEDs), horizontal tunneling and surface band bending: an external technique for wavelength tuning of, 199
Surface-emitting light-emitting diodes (LEDs) through γ-ray irradiation, spectral tuning of shallow-junction, 92

Target detection, goal programming for preliminary design and critical technology identification: application to infrared step-stare moving, 57
Target detection, infrared zoom lens system for, 160
Technology identification: application to infrared step-stare moving target detection, goal programming for preliminary design and critical, 57
Telescope, bidirectional reflectance distribution function (BRDF) measurements of sunshield and baffle materials for the Infrared Astronomy Satellite (IRAS), 205
Telescope with stray-light rejection, simple infrared, 171
Theory and experimental results of a charge transport detector, 108
Thermal infrared pushbroom imagery acquisition and processing, 37
Thermodynamic-equilibrium high-altitude 4.3 μm background effects, review of some nonlocal-, 153
Transfer and 4.3 μm-atmospheric clutter observations radiative, 126
Transport detector, theory and experimental results of a charge, 108
Tuning of shallow-junction surface-emitting light-emitting diodes (LEDs) through γ-ray irradiation, spectral, 92

Tuning of surface-emitting light-emitting diodes (LEDs), horizontal tunneling and surface band bending: an external technique for wavelength, 199
Tunneling and surface band bending an external technique for wavelength tuning of surface-emitting light-emitting diodes (LEDs), horizontal, 199
Two years orbital performance summary of Stirling cycle mechanical refrigerators, 95
IIA phenomenology and band selection, balloon atmospheric mosaic measurements (BAMM), 70
2.7 micrometers, earth limb emission analysis of Spectral Infrared Rocket Experiment (SPIRE) data at, 139

Utility of infrared measurements programs, 28

Variability, statistical modeling of scene, 116
Variations, recent measurements of earth background spatial radiance, 64

Water vapor content in moderate optical paths by radiometric measurements, determination of atmospheric, 148
Wavelength tuning of surface-emitting light-emitting diodes (LEDs), horizontal tunneling and surface band bending: an external technique for, 199
Wax films used as infrared photographic recording medium, 196
γ-ray irradiation, spectral tuning of shallow-junction surface-emitting light-emitting diodes (LEDs) through, 92

Zoom lens system for target detection, infrared, 160